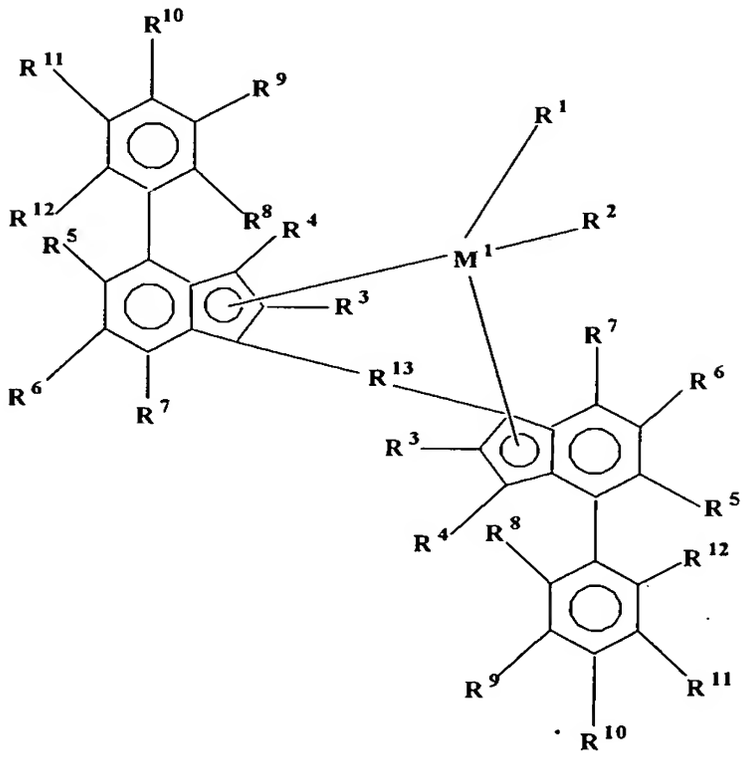
We claim:

Claim 1. A compound represented by the formula:



(I)

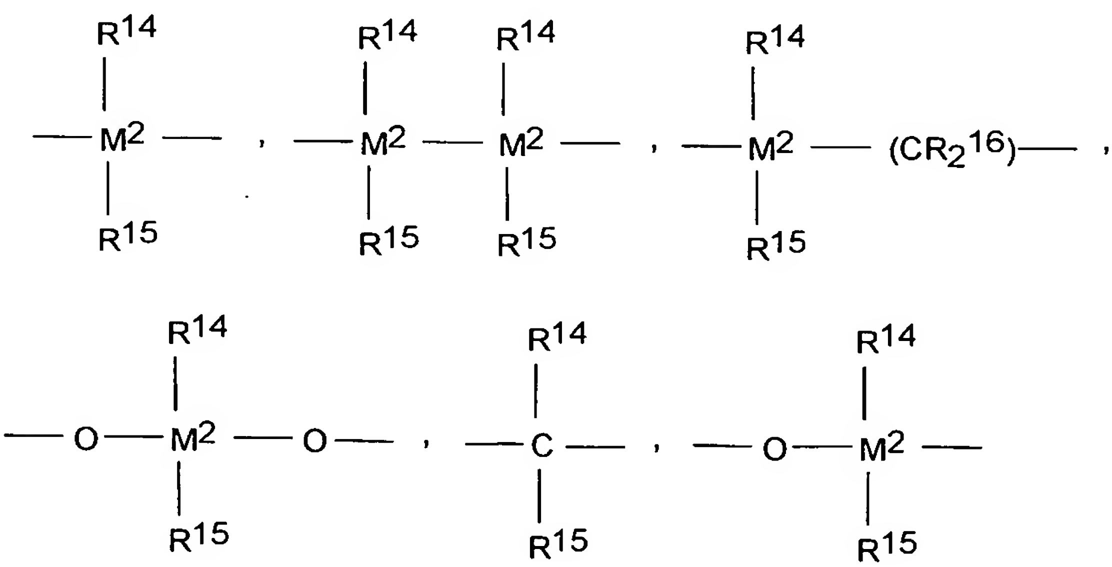
wherein: M^1 is selected from the group consisting of titanium, zirconium, hafnium, vanadium, niobium, tantalum, chromium, molybdenum and tungsten;

R^1 and R^2 are identical or different, and are one of a hydrogen atom, a C_1-C_{10} alkyl group, a C_1-C_{10} alkoxy group, a C_6-C_{10} aryl group, a C_6-C_{10} aryloxy group, ~~a C_2-C_{10} alkenyl group~~ a C_2-C_{40} alkenyl group, a C_7-C_{40} arylalkyl group, a C_7-C_{40} alkylaryl group, a C_8-C_{40} arylalkenyl group, an OH group or a halogen atom, or a conjugated diene which is optionally substituted with one or more hydrocarbyl, tri(hydrocarbyl)silyl groups or ~~hydrocarbyl,~~ tri(hydrocarbyl)silylhydrocarbyl groups, said diene having up to 30 atoms not counting hydrogen;

R^3 are identical or different and are each a hydrogen atom, a halogen atom, a C_1-C_{10} alkyl group which may be halogenated, a C_6-C_{10} aryl group which may be halogenated, a C_2-C_{10} alkenyl group, a C_7-C_{40} arylalkyl group, a C_7-C_{40} alkylaryl group, a C_8-C_{40} arylalkenyl group, a $-NR'_2$, $-SR'$, $-OR'$, $-OSiR'_3$ or $-PR'_2$ radical, wherein R' is one of a halogen atom, a C_1-C_{10} alkyl group, or a C_6-C_{10} aryl group;

R^4 to R^7 are identical or different and are hydrogen, as defined for R^3 or two or more adjacent radicals R^5 to R^7 together with the atoms connecting them form one or more rings;

R^{13} is

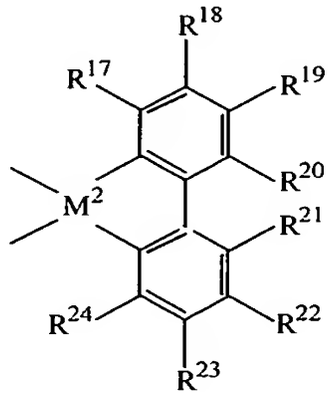


$-B(R^{14})-$, $-Al(R^{14})-$, -Ge-, -Sn-, -O-, -S-, -SO-, $-SO_2-$, $-N(R^{14})-$, -CO-, $-P(R^{14})-$, or $-P(O)(R^{14})-$, or an amidoborane radical;

wherein: R^{14}, R^{15} and R^{16} are identical or different and are a hydrogen atom, a halogen atom, a C_1-C_{20} alkyl group, a C_1-C_{20} fluoroalkyl or silaalkyl group, a C_6-C_{30} aryl group, a C_6-C_{30} fluoroaryl group, a C_1-C_{20} alkoxy group, a C_2-C_{20} alkenyl group, a C_7-C_{40} arylalkyl group, a C_8-C_{40} arylalkenyl group,

a C_7-C_{40} alkylaryl group, or R^{14} and R^{15}, together with the atoms binding them, form a cyclic ring;

or R^{13} is represented by the formula:



wherein: R^{17} to R^{24} are ~~as defined for R^1 and R^2~~ or two or more adjacent radicals R^{17} to R^{24}, including R^{20} and R^{21}, together with the atoms connecting them form one or more rings;

M^2 is one or more carbons, silicon, germanium or tin;

R^8, R^{10} and R^{12} are identical or different and have the meanings stated for R^4 to R^7; and

R^9 and R^{11} are identical or different and are each primary, secondary or tertiary butyl groups.

Claim 2. The compound of claim 1 wherein R^3 are identical C_1-C_4 alkyl groups.

Claim 3. The compound of claim 1 wherein R^3 are identical C_3 alkyl groups.

Claim 4. The compound of claim 1 wherein R^4 to R^7 are hydrogen atoms.

Claim 5. The compound of claim 1 wherein R^4 to R^7 and R^{14} to R^{16} are hydrogen atoms.

Claim 6. The compound of claim 1 wherein R^9 and R^{11} are both tertiary butyl groups.

Claim 7. The compound of claim 1 wherein R^4 to R^7 and R^{14} to R^{16} are hydrogen atoms and R^9 and R^{11} are both tertiary butyl groups.

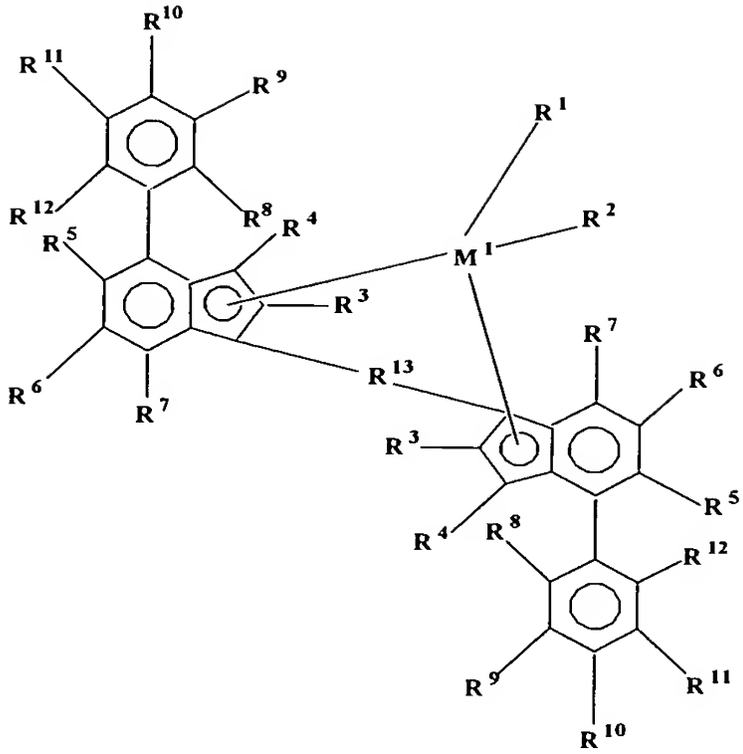
Claim 8. A catalyst composition comprising the reaction product of the compound of claim 1 and a cocatalyst.

Claim 9. The catalyst composition of claim 8 wherein the cocatalyst comprises one or more non-coordinating anion activators.

Claim 10. The catalyst composition of claim 8 wherein the cocatalyst comprises one or more alkylalumoxane activators.

Claim 11. The catalyst composition of claim 8 wherein the cocatalyst comprises a non-coordinating anion activator and an alkylalumoxane activator.

Claim 12. A compound represented by the formula:



(I)

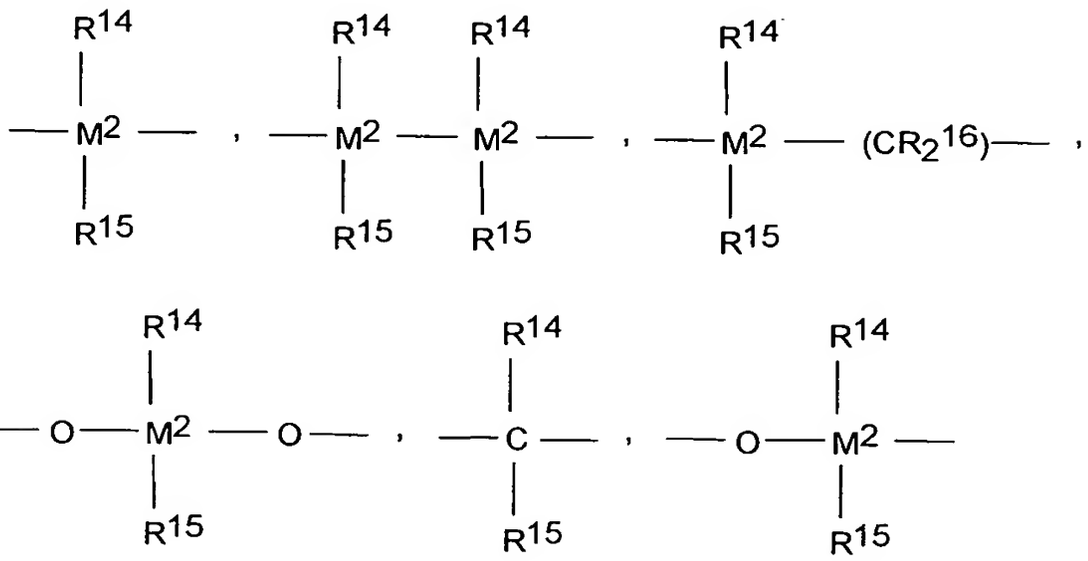
wherein: M^1 is selected from the group consisting of titanium, zirconium, hafnium, vanadium, niobium, tantalum, chromium, molybdenum and tungsten;

R^1 and R^2 are identical or different, and are one of a hydrogen atom, a C_1-C_{10} alkyl group, a C_1-C_{10} alkoxy group, a C_6-C_{10} aryl group, a C_6-C_{10} aryloxy group, ~~a C_2-C_{10} alkenyl group~~ a C_2-C_{40} alkenyl group, a C_7-C_{40} arylalkyl group, a C_7-C_{40} alkylaryl group, a C_8-C_{40} arylalkenyl group, an OH group or a halogen atom, or a conjugated diene which is optionally substituted with one or more hydrocarbyl, tri(hydrocarbyl)silyl groups or ~~hydrocarbyl~~ tri(hydrocarbyl)silylhydrocarbyl groups, said diene having up to 30 atoms not counting hydrogen;

R^3 are identical and are each a ~~C_1 or C_2 alkyl group, a C_3 alkyl group or a C_4-C_{10} alkyl group~~ C_1-C_{10} alkyl group;

R^4 to R^7 are identical or different and are hydrogen, as defined for R^3 or two or more adjacent radicals R^5 to R^7 together with the atoms connecting them form one or more rings;

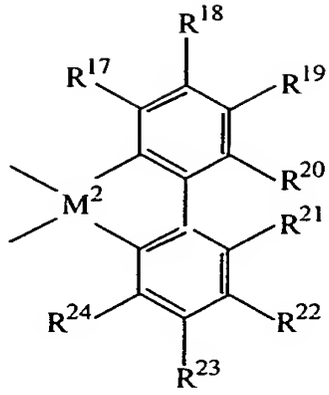
R^{13} is



-$B(R^{14})$-, -$Al(R^{14})$-, -Ge-, -Sn-, -O-, -S-, -SO-, -SO_2-, -$N(R^{14})$-, -CO-, -$P(R^{14})$-, or -$P(O)(R^{14})$-, or an amidoborane radical;

wherein: R^{14}, R^{15} and R^{16} are identical or different and are a hydrogen atom, a halogen atom, a C_1-C_{20} alkyl group, a C_1-C_{20} fluoroalkyl or silaalkyl group, a C_6-C_{30} aryl group, a C_6-C_{30} fluoroaryl group, a C_1-C_{20} alkoxy group, a C_2-C_{20} alkenyl group, a C_7-C_{40} arylalkyl group, a C_8-C_{40} arylalkenyl group, a C_7-C_{40} alkylaryl group, or R^{14} and R^{15}, together with the atoms binding them, form a cyclic ring;

or R^{13} is represented by the formula:



wherein: R^{17} to R^{24} are ~~as defined for R^1 and R^2~~, or two or more adjacent radicals R^{17} to R^{24}, including R^{20} and R^{21}, together with the atoms connecting them form one or more rings;

M^2 is one or more carbons, silicon, germanium or tin;

R^8, R^{10} and R^{12} are identical or different and have the meanings stated for R^4 to R^7; and

R^9 and R^{11} are identical or different and are each primary, secondary or tertiary butyl groups.

Claim ~~13~~ 9. The compound of claim ~~12~~ 8 wherein R^4 to R^7 are hydrogen atoms.

Claim ~~14~~ 10. The compound of claim ~~12~~ 8 wherein R^4 to R^7 and R^{14} to R^{16} are hydrogen atoms.

Claim ~~15~~ 11. The compound of claim ~~12~~ 8 wherein R^3 are both C_3 alkyl groups and R^9 and R^{11} are both tertiary butyl groups.

Claim ~~16~~ 12. The compound of claim ~~12~~ 8 wherein R^4 to R^7 and R^{14} to R^{16} are hydrogen atoms and R^9 and R^{11} are both tertiary butyl groups.

Claim 17. A catalyst composition comprising the reaction product of the compound of claim 1 and a cocatalyst.

Claim 18. The catalyst composition of claim 17 wherein the cocatalyst comprises one or more non-coordinating anion activators.

Claim 19. The catalyst composition of claim 17 wherein the cocatalyst comprises one or more alkylalumoxane activators.